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Kansas Department of Health and Environment

PROCEDURE FOR SUBMITTING CLOSURE REQUEST FOR BRINE RELEASE AT AN UNDERGROUND HYDROCARBON STORAGE FACILITY

Procedure #: UICLPG–31
(12/13)

Narrative:

Brine releases have the potential to contaminate soils, surface waters, and groundwater if not effectively remediated. Thirteen key elements have been identified to adequately demonstrate that the risk of environmental contamination has been removed following such an event. Based on the review of these key elements an official release closure status will be assessed with the responsible party being notified of this closure status. There are three types of closures which may be assigned to a release, these are:

Closed – When the situation, size of release and location allows complete and definitive removal.
Conditional Closure – When you are relatively sure the new release is cleaned up but chlorides in the soil are already elevated from historical spillage.
Referred – When the impacted media from the new release cannot be completely removed or remediated in a reasonable time, when groundwater impacts or threats remain, if physical structures restrict the removal of contaminated material, or when significant previously undiscovered contamination is encountered and cannot be differentiated between the new and old during removal.

Key Elements:

1. **Release Details**: a brief statement including location of the release including: the nearest identifiable landmark, well, etc, legals include (quarter, section, township, range and county) and GPS location for the release site, estimated volume of the release, and date and time release occurred.

2. **Reporting**: Who made the initial release notification? Who was release reported to? Times and dates of these notifications.

3. **Initial Response and Containment**: How was the release secured (isolation of brine lines, closing valve, turning off a pump, etc)? How was release contained (digging bell hole, constricting temporary containment dams, etc)? Did release leave company owned property or impact a water way?

4. **Extent of Release**: Provide a detailed site description of the release area. How far did release flow (size of impacted area in feet), etc? **PROVIDE A SITE MAP (Example Provided) including original release point, outline of extent of release, initial excavations, locations of soil samples (covered in item #9), identify surrounding wells, landmarks, etc and scale and legend for map.**

5. **Recovery of Released Fluids**: If released fluid was recovered, how was it recovered? Volume of initially recovered fluid up to the time the release is being identified during initial excavated? This

recovered volume will replace the estimated release volume from item #1 above, updating the official release report volume. In some cases a secondary fluid volume recovered after the release has been identified while preparation is being made for repairs might need to be submitted. This will include volume from de-inventorying brine system which is separate from the official release volume.

6. **Repair**: Describe how release was repaired:
    a. If associated with the pipeline: Was a temporary clamp installed? Was a patch, half sleeve or full sleeve welded around leak locations? Was a section of pipe replaced or lined? Etc…Provide size and length of these patches, sleeves, replacement or liner.
    b. If associated with a valve: Was valve closed if inadvertently left open? Was the valve replaced or was packing added to the stem? Etc…
    c. If associated with a workover or other: Did the well kick, if so how was it controlled? Describe corrective action if: a hose leaked or was damaged, pressure relief valve discharged, or tank overflowed, etc.

7. **Excavation**: Describe how site was excavated and impacted material removed via mechanical or hydro excavation, depths of excavations, volume of impacted material removed per type of excavation method, etc.

8. **Method of Disposal of Impacted Material**: Where was impacted material disposed of? (Name and location of landfill or if emplaced into an approved cavern, provide name and location of emplacement cavern). **Provide** Bureau of Waste Management's special waste authorization id.

9. **Soil Samples**: How, where, and depths of soil samples collected? Field screens may be used for initial excavation however samples for the closure request **must** by analyzed for chlorides by a KDHE certified laboratory. These lab results may be summarized in a table and do not need to be submitted with the closure report but must be kept on site and available upon request. In addition, background samples from outside the impacted are should be taken.

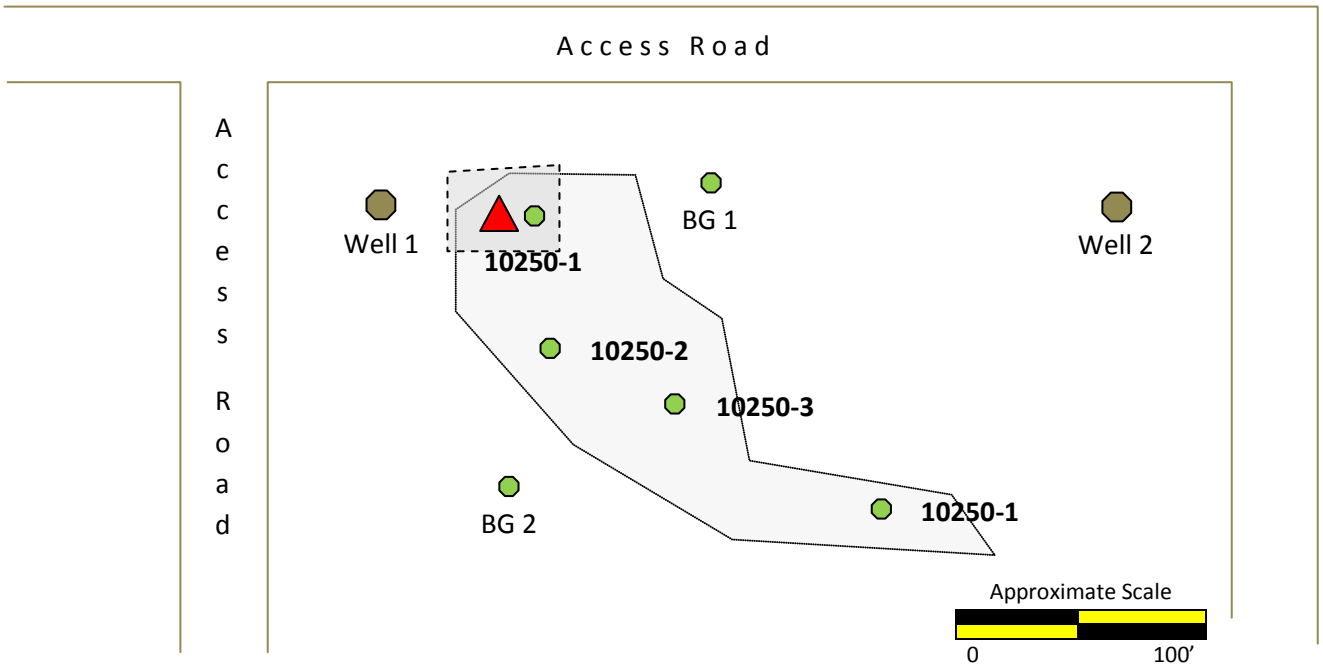
10. **Backfill**: Volume of material used to backfill site? Origination point of backfill material? Determination or lab sample of backfill material to ensure it is "clean".

11. **Flushing**: If flushing is used as a method of remediation describe how it was conducted, provide source, volume, and chloride concentration of flush fluid along with volumes and chloride concentrations of recovered flush fluid. Describe how samples were collected and analyzed to determine flushing was successful, field screens may be used for initial results however samples for the closure request **must** by analyzed by a KDHE certified laboratory.

12. **Site Restoration**: After backfill or flushing was site seeded to re-establish vegetation cover (type and rate of application). Was a soil amendment used (type and rate of application)? It may be necessary to irrigate area to aid in the re-establishment of vegetation. Was location rocked or graveled to provide erosion control for drainage or to replace well pad or road? Was erosion mat and or silt fence installed, etc?

13. **Final Summary**: Summarize why you believe the closure requirements have been met.

Site Diagram



LEGEND:

- Well
- Release Point
- Sample Point
- Extent of Release
- Extent of Initial Excavation
- Access Road

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W E
S

KDHE Release #	10250
Site Location:	50' east of well 1
Company Name:	M&J Consolidated
Address:	4100 Clearview Dr Nowheresville, KS 60606
Legal: (Quarter, Section, Town, Range, County)	NE,SW,NW S20 T11S R16E Shawnee
GPS Location: (any format acceptable)	N 39°4'58" W 95°39'57"

SOIL SAMPLES:

Sample ID	Date Collected	Depth (ft / below ground level)	Chloride Level (mg/kg)	Sample ID	Date Collected	Depth (ft / below ground level)	Chloride Level (mg/kg)
BG-1	10/28/02	0-1	450	10250-2	11/4/02	2-3	3,500
BG-2	10/28/02	1-2	435	**10250-2**	**11/9/02**	**3-4**	**870**
10250-1	10/28/02	4-5	29,600	10250-3	10/28/02	1-2	4,500
10250-1	10/28/02	5-6	18,300	10250-3	11/4/02	2-3	1,300
10250-1	11/4/02	6-7	2,900	**10250-3**	**11/9/02**	**3-4**	**650**
10250-1	**11/9/02**	**7-8**	**980**	10250-4	10/28/02	0-1	1600
10250-2	10/28/02	1-2	18,700	**10250-4**	**11/4/02**	**1-2**	**480**

NOTES:

1. Brine release occurred on: **October 25, 2002**
2. The Kansas Department of Health and Environment (KDHE) action level for chlorides is 1,000 mg/kg for brine impacted soils.
3. Concentrations above KDHE action level for chlorides denoted in RED.
4. Concentrations below KDHE action level for chlorides denoted in **BLACK** (Report closure samples).
5. Soil samples analyzed for chlorides by: **A1 Environmental Laboratory**
6. BG – Background soil sample collected outside the extent of the release.